

What is claimed is:

1. An adaptive writing method of writing data on an optional recording medium using a write pulse waveform including a first pulse, a last pulse and a multi-pulse train, the adaptive writing method comprising:

controlling a level of write power of the laser diode in accordance with a magnitude of a present mark of the input data and a magnitude of at least one of a leading space of the present mark and a trailing space of the present mark; and

writing the data on the optical recording medium using the level of write power of the laser diode.

2. The adaptive recording method according to claim 1, wherein the power of the laser diode is varied based on a recording power level controlled by auto laser diode power control (ALPC).

3. The adaptive recording method according to claim 1, wherein the mark size is in a range of 3T to 14T.

4. An adaptive recording method for controlling power which a laser diode applies to a recording medium, comprising:

discriminating a mark size to be recorded on the recording medium from an input signal;

setting a level of write power of the laser diode in accordance with a magnitude of a present mark of the input data and a magnitude of at least one of a leading space of the present mark and a trailing space of the present mark; and writing the data on the optical recording medium using the level of write power of the laser diode.

5. The adaptive recording method according to claim 4, wherein the power of the laser diode is varied based on a recording power level controlled by auto laser diode power control (ALPC).

6. An adaptive writing method of writing data on an optical recording medium using a write pulse waveform including a first pulse, a last pulse and a multi-pulse train, the adaptive writing method comprising:

discriminating a mark size of input NRZI (Non Return to Zero Inversion) data; and

increasing power of overwrite pulses in accordance with a magnitude of a present mark of the input data and a magnitude of at least one of a leading space of the present mark and a trailing space of the present mark.

7. An adaptive recording apparatus for controlling power of a laser diode, comprising:

a discriminator which discriminates at least one of a mark size and a relationship between preceding and following spaces of input data and accordingly sets a power level which increases according to the mark size based on the discriminated mark size;

a generator which generates an overwrite pulse by controlling a waveform of an overwrite pulse in accordance with the input data; and

a laser diode driver which adaptively drives the laser diode in accordance with the mark size by converting a differentiated value between the power level set by the discriminator and a level of a reflected optical signal into a current signal.

8. The adaptive recording apparatus according to claim 7, wherein the discriminator further comprises a table in which respective power level data corresponding to mark sizes in a range of $3T$ to $14T$ are stored and the discriminator sets power levels for the respective mark sizes by reference to the table.

9. The adaptive recording apparatus according to claim 8, wherein the data stored in the table are updated into optimal power level data.

10. An adaptive recording method for controlling power which a laser diode applies to a recording medium, comprising:

discriminating a mark size to be recorded on the recording medium from an input signal;

initially setting a level of write power of the laser diode in accordance with the discriminated mark size wherein the initially set level of write power increases as the mark size increases in a range of mark sizes of $3T$ to $14T$; and

adaptively varying the level of write power applied to the laser diode set for each mark or space in response to a power level of a signal reflected from the recording medium during production of the marks.

11. The adaptive recording method of claim 10, wherein the initially set power level increases proportional to the mark size in the range of mark sizes of 3T to 14T.

12. The adaptive recording method of claim 10, wherein the initially set level of the write power for a mark size of 5T is about 10 percent greater than the initially set level of write power for a mark size of 3T.

13. The adaptive recording method of claim 10, wherein the initially set level of the write power for a mark size of 11T is about 20 percent greater than the initially set level of write power for a mark size of 3T.